B. SAFETY CONSIDERATIONS

> ⚠ ***WARNING: Please follow manufacturers test procedures whenever possible. Do not attempt to measure unknown voltages or components until a complete understanding of the circuit is obtained.***

GENERAL GUIDELINES

ALWAYS

- Test the 255 before using it to make sure it is operating properly.
- Inspect the test leads before using to make sure there are no breaks or shorts.
- Double check all connections before testing.
- Have someone check on you periodically if working alone.
- Have a complete understanding of the circuit being measured.
- Disconnect power to circuit, then connect test leads to the 255, then to circuit being measured.

NEVER

- Attempt to measure unknown high voltages.
- Attempt to measure current with the meter in parallel to the circuit.
- Connect the test leads to a live circuit before setting up the instrument.
- Touch any exposed metal part of the test lead assembly.

INTERNATIONAL SYMBOLS

- **CAUTION: RISK OF ELECTRIC SHOCK**
- **AC (Alternation Current)**
- **DC (Direct Current)**
- **REFER TO INSTRUCTION MANUAL**
- **GROUND**
- **DOUBLE INSULATION**
- **EITHER DC OR AC**

C. TECHNICAL DATA

1. Features and Benefits

Agency	UL Listed to U.S. and Canadian Safety Standards. Meets CE and IEC 1010.
4000 Count	Improves the resolution on all functions and ranges.
Data Hold	Maintains the reading on the display for hard to reads areas.
Autorange	Set the 255 to correct function, connect meter and it automatically finds correct range.
500 mSec Conversion	Captures inrush (peak) current of motors, relays and solenoids.
Min/Max	Records Min/Max readings for all functions and ranges.
Auto Off	Automatically powers off after 34 minutes of inactivity.

2. Product Applications

Perform the following tests and/or measurements with the 255 and the appropriate function:

HVAC/R

ACA	• Heat anticipator current in thermostats.
ACV	• Line voltage.
ACV or DCV	• Control circuit voltage.
OHMS	• Heating element resistance (continuity).
OHMS	• Compressor winding resistance.
OHMS	• Contactor and relay coil resistance.
ACA	• Motor and compressor start up current.
OHMS	• Continuity of wiring.
REC	• Record min/max voltage of controls and line voltages.

ELECTRICAL

ACV	• Measure line voltage.
ACA	• Measure line current.
OHMS	• Continuity of circuit breakers.
DCV	• Voltage of direct drive DC motors.
ACA	• Start up current of motors, relays, contactors and transformers.

ELECTRONIC

ACV	• Measure power supply voltage.
ACA	• Measure power supply current.
OHMS	• Continuity of circuit breakers and fuses.

3. Specifications

CE **IEC 1010 Over Voltage:**
CAT II - 1000VDC, 600VAC
CAT III - 600V
Pollution Degree 2

c UL us LISTED UL 3111-1

※ **INSTALLATION** Ⅰ · Ⅱ · Ⅲ

INSTALLATION CATEGORY
(OVERVOLTAGE CATEGORY) Ⅰ
: Signal level, special equipment or parts of equipment, telecommunication, electronic etc., with smaller transient overvoltages than INSTALLATION CATEGORY Ⅱ .

INSTALLATION CATEGORY
(OVERVOLTAGE CATEGORY) Ⅱ
: Local level, appliances, PORTABLE EQUIPMENT etc., with smaller transient overvoltages than INSTALLATION CATEGORY Ⅲ .

INSTALLATION CATEGORY
(OVERVOLTAGE CATEGORY) Ⅲ
: Distribution level, fixed installation, with smaller transient overvoltages than INSTALLATION CATEGORY Ⅳ

a. DCV

Range	Resolution	Accuracy	Impedance
4V	0.001V	±0.3% of reading,	10MΩ
40V	0.01V	±2 digits	
400V	0.1V		
600V	1V		

b. ACV (45Hz to 450Hz)

Range	Resolution	Accuracy	Impedance
4V	0.001V	±0.8% of reading,	10MΩ
40V	0.01V	±3 digits	
400V	0.1V	±1.2% of reading,	
600V	1V	±3 digits	

c. ACA

Range	Res.	Accuracy	Freq. Response
40A	0.01A	±2% of reading,	
400A	1A	±5 digits	

⚠ **Warning:** Test Leads. Use only correct type and overvoltage category rating.

e. OHM (Resistance,Ω)

Range	Res.	Accuracy	Overload Protection
400Ω	0.1Ω	±0.5% of reading,	600V DC or
4kΩ	0.001kΩ	±2 digits	AC Peak
40kΩ	0.01kΩ		
400kΩ	0.1kΩ		
4MΩ	0.001MΩ	±1% of reading,	
40MΩ	0.01MΩ	±2 digits	

f. Continuity Buzzer

Test Voltage	Threshold	Over Load Protection
3V	< 50Ω (100 digits)	600 V DC or Peak AC

h. General Specifications

Max. Volt. between any Input and Ground	600V
Display Type	4,000 Count, 2 times per second update
Operating Temp.	0° to 40°C (32° to 104°F)
Storage Temp.	-10° to 50°C (14° to 122°F)
Relative Humidity	0% to 80%
Altitude operating	6,562ft (2,000meter)
Non-operating	40,000ft (12,000meter)
Power Supply	2 Each 1.5 Volt "AA" Batteries
Battery Life	200 hrs. Typical
Size (H x L x W)	40mm x 190mm x 65mm (1.5in x 7.25in x 2.5in)
Weight	303g (11.1oz)

⚠ **Warning:** Test Leads. Use only correct type and overvoltage category rating.

D. MEASUREMENT TECHNIQUES

1. Controls and Functions:

Push Buttons

REC Activates the Record function.

HOLD Holds the reading on the display until the button is pushed a second time.

Rotary Switch

OFF Turns the 255 completely off.

$\overline{\overline{V}}$ Used to measure DC volts.

$\tilde{V}$ Used to measure AC volts.

Ω Used to measure resistance and use the continuity buzzer.

$\tilde{A}$ Used to measure AC amps.

1. Controls and Functions: (cont.)

Input Jacks

COM Black test lead connection for ACV, DCV, Ω, Continuity Buzzer and Diode Test functions.

V/Ω Red test lead connection for all ACV, DCV, Ω, Continuity Buzzer and Diode Test functions.

Disable Auto Power Off

Press and hold the "REC" and "HOLD" push buttons and turn the 255 on. Release the buttons.

F. MAINTENANCE

1. **Battery Replacement:** The 255 will display a battery symbol when the internal "AA" 1.5 Volt batteries needs replacement. The batteries are replaced as follows:

   a. Disconnect and remove all test leads from live circuits and from the 255.
   b. Loosen the screw from the back of the 255 battery cover.
   c. Remove the battery compartment cover.
   d. Remove old battery and replace with new battery, observing the correct polarity.
   e. Reassemble the instrument in reverse order from above.

2. **Cleaning your 255:**
   Use a mild detergent and slightly damp cloth to clean the surfaces of the 255.

G. TROUBLE SHOOTING GUIDE

Problem	Probable Causes
Does not power up	• Dead or defective battery • Broken wire from battery snap to PCB
Won't display current readings	• Open fuse • Open test lead • Improperly connected to circuit under test
All functions except ohms read high	• Very weak battery that will not turn on the low battery indicator on the LCD
AC Volts do not read	• Very weak battery that will not turn on the low battery indicator on the LCD

WARRANTY

Please refer to product warranty card for warranty statement.

255 SPECIFICATIONS

±0.3% Basic DCV Accuracy (also see pages 9-10)

Func.	Range	Res.
DCV	4V	0.001V
	40V	0.01V
	400V	0.1V
	600V	1V
ACV	4V	0.001V
	40V	0.01V
	400V	0.1V
	750V	1V
ACA	40A	0.1A
	400A	1A
OHM	400Ω	0.1Ω
	4kΩ	0.001kΩ
	40kΩ	0.01kΩ
	400kΩ	0.1kΩ
	4MΩ	0.001mΩ
	40MΩ	0.01MΩ
Continuity	Test Voltage	Max Test Current
	3V	< 50Ω (100 digits)